Chart booklet

Preliminary version for country introduction

GUIDELINES FOR AN INTEGRATED APPROACH TO THE NUTRITIONAL CARE OF HIV-INFECTED CHILDREN (6 MONTHS–14 YEARS)

World Health Organization

Guidelines for an Integrated Approach to the Nutritional care of HIV-infected children (6 months-14 years)

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Table of Contents

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It is expected to update the guideline by 2015.

Introduction

The Guidelines provide a framework for integrating nutrition support into the routine care of HIV-infected children. Although the severe nutritional consequence of HIV infection in adults and children has been recognised for many years, gaps remain in the evidence-base for defining effective interventions to prevent and treat HIV-associated malnutrition in resource-constrained settings. As a result, the development and implementation of guidelines on how best to offer nutritional care to HIV-infected children has lagged. The delivery of such care has also been compromised by service providers' overburden and need for training, recurring staff losses and weakened health care systems in HIV-affected settings. Finally, vertical implementation of HIV programmes, such as PMTCT and ART, have resulted in missed opportunities to gain synergy with other existing services.

In 2004 WHO commissioned a technical review of the nutritional requirements of adults and children infected with HIV as an evidence-base for the development of nutritional care guidelines. These were presented at the WHO technical consultation on Nutrition and HIV/AIDS held in Durban, April 2005, where participants called for urgent action to '*Develop practical nutrition assessment tools and guidelines for home, community, health facility–based and emergency programmes.*' Specific aspects of this recommendation were to '*Develop standard and specific guidelines for nutritional care of individuals …* ' and to '*Review and update existing guidelines to include nutrition/HIV considerations (e.g., integrated management of adolescent and adult illness, ARV treatment, nutrition in emergencies*)'.

HIV-infected children deserve special attention because of their additional needs to ensure growth and development and their dependency on adults for adequate care including nutrition care and support for treatment. This is of particular importance in light with the recommendation to start treatment as soon as possible in infected children and the fact that nutrition plays an important role in support to antiretroviral treatment. It was therefore proposed to first develop guidelines for children and thereafter consider a similar approach for other specific groups.

In May 2006, WHO and NIH held a technical consultation in Washington, DC to review the guidelines and the technical and scientific base used in development of the guidelines. Participants included scientists and experienced practitioners. Feedback was made following careful assessment and using a feedback form.

The guidelines were field-tested twice in South Africa (2006) in Durban at the Prince Mshiyeni Memorial Hospital and in Johannesburg at the Harriet Chezi Pediatric ARV clinic in Soweto. The information was presented in a full document (The Handbook) and the charts were used and field-tested in a separate one (The Chart Booklet). The two field-tests focused on testing the use, understanding, flow and organization of the information given. Several health workers from different backgrounds, i.e. nutritionists, dieticians', paediatricians', clinicians, chief nurses and community workers, participated in the field-test. The guidelines proved to be very useful, easy to follow, and certainly filled a gap in nutrition assessment, classification and management as far as nutrition is concerned. Some useful suggestions from the group were incorporated into the second version.

The revised version of the guidelines were again field-tested twice in Nairobi, Kenya (2007) and Dr Ruth Nduati an expert in the area assisted WHO in planning and conducting the field-test.. This was followed by a third field-test in Malawi by Dr Mark Manary. Feedback was considered and a revised version of the guidelines was prepared.

Two meetings were held in Geneva (24 May 2007 and 10-12 July 2007) to review and discuss the revised guidelines with experts in various areas: growth reference study, emergencies, HIV/AIDS and nutrition, paediatric care, child health. Feedback was considered and agreement reached on all scientific information and recommendations.

The content of these guidelines acknowledges that wasting and undernutrition in HIV-infected children may reflect a series of failures within the health system, the home and community and not just a biological process related to virus and host interactions. In trying to protect the nutritional well-being or reverse the undernutrition experienced by infected children, issues of food insecurity, food quantity and quality as well as absorption and digestion of nutrients are considered. Interventions are proposed that are practical and feasible in resource poor settings and offer a prospect of clinical improvement.

The guidelines do not cover the feeding of infant 0 to 6 months old, because the specialised care in this age group is addressed in other WHO guidelines and documents.[1]

Values used in these guidelines

All values and figures used in these guidelines will be continuously revised and updated, according to the most recent scientific evidence and research results. If there is any critical change to be made, this will be immediately reflected on the web version of the guidelines, indicating date of the change.

[1] *The guidelines and documents are available in the following sites:*
http://www.who.int/nutrition/topics/feeding_difficulty/en/index.html
http://www.who.int/child_adolescent_health/topics/prevention_care/child/nutrition/hivif/en/index.html

SECTION ONE - ASSESS, CLASSIFY AND DECIDE A NUTRITIONAL CARE PLAN

ASK

Ask mother/caregiver (or check the medical records)

1. Has the child lost weight during the past month?

2. Does the child have:
   - cough for more than 21 days
     (this may be due to HIV-related chronic lung disease such as LIP, bronchiectasis or TB)
   - active TB on treatment
   - diarrhoea for more than 14 days
   - other chronic OI or malignancy

Ask all questions and complete all assessments with each child

LOOK and FEEL

1. Look for signs of severe visible wasting
- Loss of muscle bulk
- Sagging skin/buttocks

2. Check for presence of oedema of both feet (or sacrum)

3. Check the weight and height
- Is the weight-for-height less than -3 z-score?
- Is the child very low weight (weight for age less than -3 z-score)?
- Is the child underweight (weight for age less than -2 z-score)?

4. Check the MUAC

Infants 6-12 months
- Is MUAC less than 115 mm?

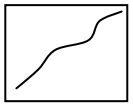
Children 13-60 months
- Is MUAC less than 115 mm?

Children 5-9 years
- Is MUAC less than 129 mm?

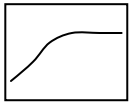
Children 10-14 years
- Is MUAC less than 160 mm?

5. Look at the shape of the growth curve
- Has the child lost weight since the last visit? (*confirm current weight by repeating measurement*)
- Is the child's growth curve flattening?
- Is the child gaining weight?

Gaining weight



Growth curve flattening



Losing weight

Assess growth in all children

SIGNS	CLASSIFY AS	TREAT
Signs of severe visible wasting, or Oedema present in both feet, or Weight-for-height less than -3 z-score, or MUAC less than: • 115 mm in infants *6-12 months* • 115 mm in children 13-60 months • 129 mm in children *5-9 years* • 160 mm in children *10-14 years*	**SEVERE MALNUTRITION**	**NUTRITION CARE PLAN C**
Reported weight loss, or Very low weight (weight for age less than -3 z-score), or Underweight (weight for age less than - 2 z-score), or Confirmed weight loss (>5%) since the last visit, or Growth curve flattening	**POOR WEIGHT GAIN**	**NUTRITION CARE PLAN B**
Child is gaining weight	**GROWING APPROPRIATELY**	**NUTRITION CARE PLAN A**
Chronic lung disease, or TB, or Persistent diarrhoea, or Other chronic OI or malignancy	**CONDITION WITH INCREASED NUTRITIONAL NEEDS**	**NUTRITION CARE PLAN B**

Nutrition Care Plan A for the child who is growing well ± ART

1st Action. Ask about general condition and if child is on any treatment including ART and TB medicine?

- Also check immunizations (Step 7)
- Is the child at school?
- If child is on ART then also complete Step 10. Check if ART dose needs to be adjusted up.

2nd Action. Check mother's health (+ need for ART) and care of other children

3rd Action. Nutrition counselling

- Encourage mother/caregiver that the child is growing well. Explain growth chart and how to follow progress.
- Ask, have there been any major changes in the child's circumstances from the last visit that might put the care of the child at risk, including access to food?
- Advise mother/caregiver why additional food (energy) is needed in children (and adults) with HIV infection (approx 10%).
- Counsel on continued breastfeeding if mother is well (check national guidelines related to breastfeeding policy and age of the child).
- Counsel on complementary feeding and replacement feeding (frequency of meals, amount and type of food per meal, responsive feeding – see Appendices VI and VII). Reinforce and encourage good practices.
- Counsel on feeding a variety of foods such as milk, fruit, vegetables, whole grains, cereals and meat/chicken or fish based on local diets i.e. food sources that are high in vitamin A, iron, calcium, etc. and other locally produced foods.
- Review safe food preparation, food and water storage methods and hygiene issues (keep hands, utensils and food preparation area clean; separate raw and cooked foods; cook food thoroughly; keep food at safe temperature; use safe water and food).
- Check if there are other sources of good foods such as garden projects or other community resources.

4th Action. Meet age-specific needs and additional 10% energy based on actual weight

Examples of ways to increase energy intake by 10% using food
GIVE IN ADDITION TO THE MEALS AND SNACKS APPROPRIATE FOR THE CHILD'S AGE

6-11 months [additional 60-75 kcal = Total ~760 kcal/day]

- **LOCAL ADAPTATION** – Give examples and quantities of local foods that can be used to increase energy density of other foods e.g. 2 tsp margarine/oil and 1-2 tsp sugar to porridge or that can be given in addition to normal diet.

12 -23 months [additional 80-95kcal = Total ~990 kcal/day]

- **LOCAL ADAPTATION** – Give examples and quantities of local foods that can be used to increase energy density of other foods e.g. margarine/oil and sugar to porridge or that can be given in addition to normal diet.

2-5 years [additional 100-140 kcal = Total ~1390 kcal/day]

- **LOCAL ADAPTATION** – Give examples and quantities of local foods that can be used to increase energy density of other foods or that can be given in addition to normal diet e.g. extra cup of full cream milk/fermented milk.

6-9 years [additional 130-190 kcal = Total ~1815 kcal/day]

- **LOCAL ADAPTATION** – Give examples and quantities of local foods that can be used to increase energy density of other foods or that can be given in addition to normal diet e.g. extra cup of full cream milk/fermented milk.

10-14 years [additional 170-230 kcal = Total ~2200 kcal/day]

- **LOCAL ADAPTATION** – Give examples and quantities of local foods that can be used to increase energy density of other foods or that can be given in addition to normal diet. e.g. extra cup of fruit yoghurt or cheese/peanut butter sandwich

5th Action. Ensure adequate micronutrient intake

- If the child's diet is not balanced and does not contain a variety of animal sourced foods, fruits and vegetables then give a daily micronutrient supplement that provides 1 Recommended Daily Allowance of a wide range of vitamins and other micronutrients. Refer to national guidelines.

6th Action. Vitamin A supplements every 6 months

- 6-12 months 100 000 IU 1-5 years 200 000 IU

Do not give if child has received dose within the past month e.g. from hospital

For children >5 yrs, vitamin A should be provided through regular daily micronutrient supplements

7th Action. De-worm every 6 months (Step 7)

- Albendazole (oral) 400 mg single dose every 6 months after first year of life.

8th Action. Cotrimoxazole prophylaxis (Step 7)

- Provide from 6 weeks of age 5 mg/kg/day. See step 7 for guidance on when to stop.

9th Action. Ensure mother/caregiver understands care plan and ask if she/he has any questions

10th Action. Review in 2-3 months (tell caregiver to return earlier if problems arise).

Nutrition Care Plan B for the child with poor weight gain or increased nutritional needs

1st Action. Clinically stage the child (Appendix I) and assess for ART. Check for treatable conditions. If on ART, assess, clinical and immunological response (complete Step 10). Refer if indicated

2nd Action. Check mother's health (+ need for ART) and care of other children

3rd Action. Nutrition counselling

- What does the child eat and drink? (Step 4)
- Who gives the child his/her food and how does the child eat? (Step 5)
- Is there food at home? (Step 6)
- Advise mother/caregiver why additional food (energy) is needed in children (and adults) with HIV + complications.
- Review safe food preparation, food and water storage methods and hygiene issues. (Step 7)
- Ask, have there been any major changes in the child's circumstances from the last visit that might put the care of the child at risk, including access to food? (Step 6)

4th Action. Meet age-specific needs and additional 20- 30% food (energy) based on actual weight

These needs may be achieved either through a food-based approach or through specific nutritional supplements – either form of support should be provided by the service/programme

Food-based approach or Nutritional Supplement∗

GIVE IN ADDITION TO MEALS AND SNACKS

6-11 months [additional 120-150 kcal per day]

- **LOCAL ADAPTATION**: Give examples of quantities and frequency of local foods that can be used to increase energy density of other foods e.g. 2 tsp margarine/oil and 1-2 tsp sugar to porridge. Aim to add 3 times daily

12-23 months [additional 160-190 kcal per day]

- **LOCAL ADAPTATION**: Give examples of quantities and frequency of local foods that can be used to increase energy density of other foods e.g. extra cup of full cream milk or cheese/peanut butter sandwich (1 slice)

2–5 years [additional 200-280 kcal per day]

- **LOCAL ADAPTATION**: Give examples of quantities and frequency of local foods that can be used to increase energy density of other foods e.g. extra cup of enriched milk or cheese/peanut butter sandwich (4 slices)

6–9 years [additional 260-380 kcal per day]

- **LOCAL ADAPTATION**: Give examples of quantities and frequency of local foods that can be used to increase energy density of other foods e.g. extra cup of enriched milk or cheese/peanut butter sandwich (6 slices)

10-14 years [additional 340-400 kcal per day]

- **LOCAL ADAPTATION**: Give examples of quantities and frequency of local foods that can be used to increase energy density of other foods e.g. 3 cheese/peanut butter/egg sandwiches (6 slices)

See Appendix III in the Handbook for examples of foods than can provide additional 20-30% energy.

5th Action. Ensure adequate micronutrient intake

- If the child's diet is not balanced then give a daily micronutrient supplement that provides 1 RDA of a wide range of vitamins and other micronutrients. Refer to national guidelines).
- Check if any prescribed nutritional supplement provides micronutrient intake. Additional supplements may not be needed.
- If recent diarrhoeal illness, give zinc supplement (20 mg daily for 2 weeks).

6th Action. Vitamin A supplements every 6 months

- 6-12 months 100 000 IU >12 months 200 000 IU

Do not give if child has received dose within the past month e.g. from hospital

For children >5 yrs, vitamin A should be provided through regular daily micronutrient supplements

7th Action. De-worm every 6 months (Step 7)

- Albendazole (oral) 400 mg single dose every 6 months after first year of life.

8th Action. Cotrimoxazole prophylaxis (Step 7)

- Provide from 6 weeks of age 5 mg/kg/day. See step 7 for guidance on when to stop.

9th Action. Ensure mother/caregiver understands care plan and ask if she/he has any questions

10th Action. Review 1st visit 1-2 weeks. If responding, then review every 1-2 months depending on response. Change to Nutrition Care Plan A when nutritional recovery achieved

∗ The term nutritional supplement is used to refer to fortified processed foods

Nutrition Care Plan C for the severely malnourished HIV-infected child

1st Action. Assess if the child needs to be admitted "CHECK FOR GENERAL DANGER SIGNS"

- Assess if there are signs of a concurrent opportunistic infection. If yes, then Admit and Treat accordingly.
- Assess if the child wants to eat. **Conduct a test feed (Step 4).** If the child will not eat (suggestive of underlying complications) then Refer tor specialised care for management as per WHO Management of Children with Severe Malnutrition.
- If the child eats well then plan home (community-based) management according to table below. Prescribe feeds.
- Assess if there have been any major changes in the child's circumstances? (Step 6).

2nd Action. Clinically stage the child (Appendix I). Assess for ART, clinical and immunological response to ART including adherence and refer if indicated.

- All severely malnourished children or those with recent severe weight loss should be assessed for possible ART and to exclude opportunistic infections such as TB.

3rd Action. Check mother's health (+ need for ART) and care of other children

4th Action. Home management. Give Therapeutic feeds to provide 50-100% additional energy

Give Therapeutic feeding (average ~6-10 weeks) **Provide 60-220 kcal/kg/day depending on age (do not rely on home foods being available)**
6-11 months [150-220 kcal/kg/day based on actual weight] • **Local adaptation –** WHO recommends providing RUTF as the *Therapeutic Feed* of choice to children that are severely malnourished in the recovery/ growth catch-up phase of management. National recommendations should be followed to provide the target energy intake by age group.
12-23 months [150-220 kcal/kg/day based on actual weight] • **Local adaptation –** WHO recommends providing RUTF as the *Therapeutic Feed* of choice to children that are severely malnourished in the recovery/growth catch-up phase of management. National recommendations should be followed to provide the target energy intake by age group.
2-5 years [150-220 kcal/kg/day based on actual weight] • **Local adaptation –** WHO recommends providing RUTF as the *Therapeutic Feed* of choice to children that are severely malnourished in the recovery/growth catch-up phase of management. National recommendations should be followed to provide the target energy intake by age group.
6-9 years [75-100 kcal/kg/day based on actual weight] • **Local adaptation –** WHO recommends providing RUTF as the *Therapeutic Feed* of choice to children that are severely malnourished in the recovery/growth catch-up phase of management. National recommendations should be followed to provide the target energy intake by age group.
10-14 years [60-90 kcal/kg/day based on actual weight] • **Local adaptation –** WHO recommends providing RUTF as the *Therapeutic Feed* of choice to children that are severely malnourished in the recovery/growth catch-up phase of management. National recommendations should be followed to provide the target energy intake by age group.

See Appendix II in the Handbook for composition of recommended therapeutic foods and micronutrient supplementation.

5th Action. Ensure adequate micronutrient intake

- A child receiving RUTF will receive all the micronutrients that they require through the feeds.
- A child that receives therapeutic feeding based on local foods should also receive an additional vitamin-mineral supplement that meets the standards for severely malnourished children.
- If recent diarrhoeal illness and child not receiving RUTF, give zinc supplement (20 mg daily for 2-4 weeks).

6th Action. Vitamin A supplements every 6 months

- 6-12 months 100 000 IU >12 months 200 000 IU

Do not give if child has received dose within the past month e.g. from hospital

For children >5 yrs, vitamin A should be provided through regular daily micronutrient supplements

7th Action. De-worm every 6 months (Step 7)

- Albendazole (oral) 400 mg single dose every 6 months after first year of life.

8th Action. Cotrimoxazole prophylaxis (Step 7)

- Provide from 6 weeks of age 5 mg/kg/day. See step 7 for guidance on when to stop.

9th Action. Ensure mother/caregiver understands care plan and ask if she/he has any questions

10th Action. If managed at home, then review in 1 week to ensure weight gain of at least 5 g/kg/d (if managed in hospital expect weight gain of ~10-15 g/kg/d) If gaining weight then review every 1-2 weeks until recovery (children can usually only tolerate this energy intake for 6-10 weeks). If not gaining weight then consider admission. Review and change to plan A or plan B if child has condition with increased nutritional needs.

SECTION TWO – IMPLEMENTING THE NUTRITION CARE PLAN

Step 4. What does the child eat and drink

If a child is not growing well or there has been recent weight loss or growth faltering or the child is underweight, then check what the child eats and drinks.

Assess	Classify/Consider	Counsel
1. Ask about milk given a. What types of milk do you usually give to the child each day? b. How much, and how often do you give these? c. Do you ever breastfeed your child?	If no solid food eaten in last 4 meals, or only milk taken in the last 24hrs, then classify as **Serious Poor Food Intake**	If **Serious Poor Food Intake** then **refer urgently** for admission or other immediate social/welfare support.
2. Food intake (past 24 hours) Ask, from the time the child woke up yesterday until he/she went to sleep at night, what did he/she eat: ***for breakfast*** ***as a snack between breakfast and lunch*** ***for lunch*** ***as a snack between lunch and dinner*** ***for dinner*** a. Was the frequency of meals and snacks appropriate for the child's age? b. Was the quantity of the main meal appropriate for the child's age? c. Did the child eat meat, fish or eggs in the past week?	If food intake is less than recommended then classify as **Poor Food intake**. Try to identify cause e.g. recent illness, change in social circumstances, and ask if this is because there is insufficient supply, reluctance to drink or unsure of correct volumes.	If **Poor Food intake** then ▪ Counsel on complementary/ appropriate feeds (see next page). ▪ Also consider Food support (see Step 6) if appropriate (check what other public sector support is available e.g. grants and other NGO/CBO support in the area. ▪ Assess and exclude other medical conditions.
	If food intake adequate then classify as **Food intake adequate**.	If adequate and no changes in food intake then assess complementary feeding practices (see below) and then who feeds the child and how the child eats (see Step 5).

Age-related milk and food intake standards	**Appropriate**		**Insufficient**
	Full Cream Milk (incl. fermented milks)	Food (cooked)•	
6–11 months	If BF, then frequently/on demand If not BF, then 200-500 ml/day	½ cup x 4/day	Anything less than the recommended amounts
12–23 months	200-500 ml/day (1-2 cups)	¾ - 1 cup x 4/day	
24–59 months	500-750 ml/day (2-3 cups)	1 - 2 cups x 4/day	
6–9 years	500-750 ml/day (2-3 cups)	2 - 3 cups x 3/day	
10-14 years	500-750 ml/day (2-3 cups) 1 cup = 240 ml	2 - 3 cups x 3/day 1 cup = 240 ml	

IF FOOD INTAKE IS INSUFFICIENT THEN ALSO ASSESS ABILITY TO EAT

3. Ability to eat (past 48 hours) **Ask, does the child** a. Vomit everything b. Frequently vomit c. Vomit occasionally d. Have difficulty swallowing/chewing e. Have mouth sores/ulcers f. Eat well	If any difficulty is identified then assess if there is a problem of • poor appetite • sore mouth/throat • change in taste • vomiting • other	**If vomiting everything then refer urgently, check for dehydration** See Step 9 for guidance on children with specific needs If the child is on ART and vomiting – see Step 10 for children on ART

• *Assuming an energy density of 0.8-1 kcal/g.*

In children with severe malnutrition assess if the child has a good appetite and decide if child can be managed at home or needs to be admitted to hospital.

Ask about Appetite (past 48 hours)	If a. then classify as **Appetite good**. **Consider home management**
a. Keen to eat b. Reluctant to eat c. Has the child been eating less recently?	If b. or c. assess appetite of the child, if he/she does not accept food, then classify as **Appetite poor. Plan admission**

Counselling Sheet on Appropriate Feeding

If a child has Poor growth, then

1. Assess what foods are available in the community and what the family can afford.
2. Discuss, (for children up to 2 years old see Guiding principles for Complementary feeding – Appendix V and Appendix VI in the Handbook).

- the benefits and ways of providing a variety of foods each week (it may be impractical to provide all food groups every day) following these principles
  - Enjoy a variety of foods
  - Chicken, fish, milk (cow, goat etc.) and fermented milk, meat or eggs could be eaten daily
  - Eat plenty of vegetables and fruits everyday. Eat beans, peas, lentils and soy regularly
  - Use salt sparingly
  - Encourage the child to eat using a separate plate
  - Encourage and help the child to eat with patience
  - Drink clean, safe water
  - Be active
- ways of increasing the energy intake of foods (see Suggestion sheet 1)
- making wise decisions so that limited resources are used in the best way
- other local resources that may increase access to quality foods, such as garden projects or other community programmes
- socio-economic support such as microcredit initiatives
- local beliefs and practices regarding complementary feeds, foods for children with HIV
- other traditional medicines or treatments

and,

3. Refer to someone who has the time and additional knowledge to offer the best advice on the same issues. This may be someone with additional training at the clinic, a nutrition advisor or a dietician
4. Check if demonstration kitchen is available to show methods of improving food offered.
5. Check availability of local support groups/ special follow-up clinics.

Step 5. Discuss who gives the child his/her food

Assess	Classify/Consider	Manage
1. Caregiver and environment **Ask:** a. Who feeds the child most times each day? b. Who prepares the food for the child each day? c. Has the care of the child or household circumstances changed since the last visit or in the last 4 weeks? d. Is the mother living in the same household? e. Is the mother physically well (weight stable) or sick at present?	The answers to a. and b. are helpful to decide who is the most appropriate person with whom to discuss changes in feeding or food preparation. If the caregiver or circumstances (c) have changed in the past 4 weeks, then classify as **Caregiving not stable.** If the mother is living in another household or she is dead or unwell, then also classify as **Caregiving not stable.**	If **Caregiving not stable** then explore whether additional support might be helpful and whether referral to other services might be appropriate e.g. social worker or child protection or other local community resources. If the mother has recently died or is acutely unwell then make back up plan for child. Plan review of the child in 4 weeks to check he/she is being cared for adequately. **Also check about other children in the household.** **Counsel about other resources that might be available e.g. NGOs, church groups etc.**

Step 6. Assess food access and financial support

(local adaptations to these guidelines should include resources/responses as appropriate)

Assess	Classify	Manage
1. Financial support available to caregiver a. Does anyone in the household have regular income?	If yes, then classify as **Financially supported** If no, then classify as **No Financial support**	If **No financial support** explore whether additional support might be helpful and whether referral to other services might be appropriate e.g. social worker or child protection or other local community resources. (health worker needs to explore and know what other resources are available in the local communities)
2. Food access (past 4 weeks) a. Have there been days in the past 4 weeks when there has not been enough food available to feed to the child? For example when you have had to skip meals yourself or for the child ***or*** give smaller amounts?	If the answer to b. is yes, then classify as '**Serious food shortage**'	If classified as '**Serious food shortage**' then refer **urgently** to local services for Family Food Support
If yes, then ask b. Does this happen every week?	If the answer to a. is yes and to b is no, then classify as '**Food shortage**'	If classified as '**Food shortage**' then refer to local services and other community resources for consideration of Family Food Support. Explore options for food gardens etc.

When to provide Family Food Support

- If **Serious Food shortage** is identified then **urgent** support must be found
- If **Food shortage** is identified then programmes should explore ways of assisting the parent/caregiver which may include providing Food Support

When to stop Family Food Support* (consider combination of the criteria below)

- Until the acute circumstances have resolved, **or**
- Time-related e.g. 6 months, **or**
- If the child is gaining weight and at least -1 z-score for weight-for-height or weight-for-age.

Support for entire family/other children. Local policies will need to decide if they will support individual children/+siblings/+entire family.

*These criteria have not been formally tested in the context of HIV to know if they are valid and useful.

Step 7. Discuss exercise and avoid risk factors for malnutrition

- **Discuss importance of maintaining good nutritional status**
- **Discuss Exercise and Play**
- **Discuss Avoiding infections including avoiding contact with patients with active TB and use of insecticide-treated bednets (in malaria endemic areas)**
- **Discuss Hygiene and food safety**
- **Check that Immunizations are up to date**
- **Check that child is receiving daily co-trimoxazole, and regular supply of these medicines from the clinic**
- **Check that child has received deworming medicine every 6 months. If not, treat**
- **Check that child has received vitamin A - every 6 months (IMCI schedule). If not, then give**

Hygiene and food safety

- **wash hands before preparing, and eating food;**
- **keep utensils and food preparation areas clean;**
- **separate raw and cooked foods;**
- **cook food thoroughly;**
- **keep food at a safe temperature;**
- **use safe water (filter and boil if necessary) and foods.**

Immunizations

Vaccine	Asymptomatic HIV infection	Symptomatic HIV infection	Timing of vaccine
BCG	Yes	No (e.g. at a later age if no scar is present or missed earlier vaccination)	Birth
DPT	Yes	Yes	6, 10, 14 weeks
OPV	Yes	Yes	Birth, 6, 10, 14 weeks
Measles	Yes	Yes	6 and 9 months
Hepatitis B	Yes	Yes	6, 10, 14 weeks
Haemophilus Infuenza type B	Yes	Yes	6, 10, 14 weeks

In the event of exposure e.g. to chicken pox or measles, HIV-infected children especially those with severe immunosuppression should receive immunoglobulin.

- *Varicella immunoglobulin (0.15 ml/kg) within 3 days of exposure*
- *Measles immunoglobulin (0.5 ml/kg, max 15 ml) within 6 days of exposure*

Regular (Prophylactic) cotrimoxazole

All HIV-infected children should receive prophylactic cotrimoxazole following the guidelines provided below to prevent PCP pneumonia.

Co-trimoxazole formulations and dosage for infant and children living with HIV or exposed to HIV

Recommended daily dosage	Suspension (5 ml of syrup 200 mg/40 mg	Child tablet (100 mg/20 mg)	Single-strength adult tablet (400 mg/80 mg) [2]	Double strength adult tablet (800 mg/160 mg)
6 months-5 years 200 mg sulfamethoxazole/ 40 mg trimethoprim	5 ml[3]	Two tablets	Half tablet	-
6-14 years 400 mg sulfamethoxazole/ 80 mg trimethoprim	10 ml[3]	Four tablets	One tablet	Half tablet
Frequency - once a day				

With current evidence is not yet clear if cotrimoxazole continues to provide protection after immune restoration is achieved.

Regular (prophylactic) vitamin A supplements every 4-6 months (IMCI schedule)

Regular vitamin A helps protect HIV-infected children against episodes of severe diarrhoea. In this way vitamin A protects against malnutrition and improves survival in HIV-infected children. For HIV-infected children from 6 months to 5 years vitamin A supplementation can be given every 6 months in the following doses:

- 6-12 months 100 000 IU
- 1-5 years 200 000 IU

Do not give if child has received dose within the past month e.g. from hospital

For children >5 years, vitamin A should be provided through regular daily micronutrient supplements.

De-worming

Worm infestation of the intestines can result in poor appetite, anaemia and poor growth. In areas where worm infestations are common, regular deworming is recommended, using Albendazole oral, 400 mg single dose every 6 months after the first year of life.

[2] *Splitting tablets into quarters is not considered best practice. This should be done only if syrup is not available.*
[3] *Children of these ages (6 months-14 years) may swallow crushed tablets.*

Step 8. Decide if to refer and when to review

Condition	Review interval	Comment
The child who is well and growing appropriately	2-3 months	Unless needing to attend to receive routine cotrimoxazole/ micronutrient or other support/treatment, including ART
The child on antiretroviral treatment (ART)	3 months	If gaining weight and no other problems
	2-4 weeks	If failing to gain weight
The child who has chronic increased nutritional needs but investigated and no other active problems	2-3 months	Tell caregiver to return earlier if problems arise
Child starting on Nutrition Care Plan B	First visit 1-2 weeks Then 1-2 months	Tell caregiver to return earlier if problems arise
The child who is unwell and/or showing signs of growth faltering or has had recent diarrhoeal illness	2-4 weeks	May require more frequent visits depending on clinical status and support offered or being provided
When the child is malnourished +/- other signs of disease progression e.g. history of recent severe weight loss or recent diarrhoea illness	Weekly	Only if fulfils criteria for management at home and no immediate need of other investigations that require hospitalisation
When a child is severely malnourished with medical complications or no appetite	Refer for hospitalization	

SECTION THREE – CHILDREN WITH SPECIAL NEEDS

Step 9. The HIV-infected child with special needs

HIV-infected children can be expected to experience many difficulties in the course of their lives. Some of these can be made easier using simple techniques learned from other conditions. The following suggestions sheets are at the back of this *Chart Booklet*.

Suggestion sheet 1. How to add extra energy and protein to everyday foods
Suggestion sheet 2. What to try if the child does not feel like eating
Suggestion sheet 3. What to try if the child has a sore/dry mouth or throat
Suggestion sheet 4. What to try if the child has a change in taste
Suggestion sheet 5. What to try if the child has diarrhoea
Suggestion sheet 6. What to try if the child has nausea and/or vomiting

A. Eating during and when recovering from an illness – see Suggestion sheet 1

It is often difficult to encourage children to eat during a febrile illness or when otherwise unwell e.g. difficulty breathing. During these acute illnesses, HIV-infected children are likely to lose weight. If this weight is not recovered in the weeks after the illness, then the child's growth curve is likely to drop to a lower level in the long term. Hence it is important to optimise intake during illnesses if possible (in hospital this may require inserting a nasogastric tube) and targeting the recovery period to recover lost weight by ensuring the best care and nutritional intake. In the recovery period it is important to:

- increase the energy and protein using everyday foods:
- ensure that food is available day and night so that if the child is hungry then he/she has something appropriate to eat; and
- encourage the child in simple and loving ways.

<u>Some of the ways to encourage a child to eat include the following.</u>

- Make the child comfortable.
- Be patient and feed slowly.
- Feed small amounts frequently. Children may tire easily while eating, making it difficult to eat sufficient food at a sitting. Offering feeds frequently may be needed to increase food intake.
- Give foods that the child likes.
- Give a variety of foods and extra fluids.
- If the child is thirsty give fluids that have some energy e.g. milk, rather than commercial juices or fizzy drinks that have very little nutritional value.
- Pay attention to the child and make feeding a happy time.

Sick children need extra drinks and food during illness, for example if they have fever or diarrhoea. A sick child may prefer breastfeeding to eating other foods. Do not withhold food from a sick child unless there is a medical reason.

B. Poor appetite (anorexia) – see Suggestion sheet 2

Children and adults with HIV infection frequently experience loss of appetite. This may be due to sores in the mouth or because HIV infection itself can cause a loss of appetite. Some antiretroviral or other medications may also cause poor appetite.

C. Sore mouth or throat – see Suggestion sheet 3

A sore mouth or throat can make it difficult to eat. Thrush, herpes, infections and other conditions may cause a sore mouth or throat. Some conditions may respond to treatment; refer to a doctor if not sure whether there is such an infection. Mouth hygiene such as rinsing the mouth with clean water before and after meals and cleaning the teeth, is important and can help the child to feel better.

D. Change in taste – see Suggestion sheet 4

A child may find that they have a taste in their mouth or their food tastes different because of side-effects of medication or infections; this may be just temporary. Children may also be more aware of the texture or feel of foods in their mouth.

E. Children with diarrhoea – see Suggestion sheet 5

When a child passes a loose or watery stool three or more times a day, he/she has diarrhoea. It can be a side effect of medicines or a symptom of disease. Diarrhoea is often caused by contamination of water or food from poor hygiene and sanitation. It may also be linked with antiretroviral or antibiotic treatment.

Generally, diarrhoea will cease after a few days. A child should be seen at the clinic if the diarrhoea lasts for more than three days or if there is a fever or blood in the stool. An infant or young child who is not able to drink or breastfeed or is drinking poorly, becomes sicker and weak, has blood in the stool or develops a fever should be seen by a health worker immediately. A child should be referred to hospital if the diarrhoea lasts more than 14 days and there is loss of weight. A severely malnourished child with diarrhoea and dehydration should be referred to a hospital.

Zinc supplements – any child with diarrhoea (acute, persistent or dysentery) should receive zinc. The dose for children older than 6 months is 20 mg daily for 2 weeks.

Vitamin A supplements - children with diarrhoea should also receive an extra dose of vitamin A if they have **not** received their routine supplement in the previous month. This dose helps protect against serious later relapses of diarrhoea.

F. Nausea and/or vomiting – see Suggestion sheet 6

Nausea can be caused by infection, stress, certain foods, hunger, lack of water, unpleasant smells or a side-effect of some medications or treatments. Nausea may also reduce the appetite.

G. Anaemia

Anaemia is common in HIV-infected children and may be due to chronic opportunistic infections or direct effects on the bone marrow. Even in areas with high prevalence of worm

infestation and iron deficiency, anaemia in HIV-infected children cannot be assumed to be due to iron deficiency.

Children with palmar or severe palmar pallor should be referred for investigation. Iron supplements should only be started if iron deficiency is confirmed.

Step 10. Children on antiretroviral treatment

If the child is on ART, then ask:

1. **Has there been any change in eating patterns or appetite since the last visit?**
2. **Has the child vomited? If yes, has there been any fast breathing/fever? – see below**
3. **Since the last visit has the child been taking any other medicines from a doctor/pharmacy/programmes, or from other sources including traditional medicines?**
4. **Have you noticed any change in body shape or appearance of the child?**

What to do if a child on ART is gaining weight well

Most children will gain weight once started on ART. Remember to:

- Encourage the mother/father or caregiver and discuss the child's health progress.
- Check the health of the mother/father and assess if any of them needs ART.
- Check if doses of ART need to be increased with increasing weight.
- Review ART adherence and remind mother/father or caregiver of signs of OIs.

What to do if a child on ART is not gaining weight

If a child on ART is not gaining weight the healthcare worker should be thinking of:

- Failure to take ART correctly – either by non-adherence or vomiting (severe wasting with other symptoms such as abdominal pain, vomiting or fast breathing may be a sign of lactic acidosis).
- Early side effects of ART e.g. nausea.
- Development of the immune reconstitution syndrome (only to be expected in first 3 months of starting ART).
- Presence of an opportunistic infection e.g. TB.
- Late ART related side effects e.g. lactic acidosis or lipodystrophy.
- Inadequate food intake.
- Other nutritional problem e.g. inadequate food supply or preparation or caregiving.
- If on ART >6 months then possible early sign of treatment failure.

Manage

1) If persisting very low weight or visible severe wasting or oedema of both feet then **Refer urgently**.
2) Depending on available resources the healthcare worker should:
   i. assess ART adherence;
   ii. if possible, repeat the CD4 to check whether there is immunological deterioration (sign of treatment failure);
   iii. investigate and treat for any opportunistic infection or underlying disease – TB is especially important;
   iv. assess dietary intake and food security. Make appropriate referral to dietician, welfare or social worker if necessary;

v. if these resources are not available then **refer** to an ART referral site for investigation and management. If resources are available then review every 2-4 weeks and monitor growth until cause of poor weight gain is identified and managed;

vi. if the child continues to lose weight then **refer urgently** to an ART referral site.

Note. Children who are referred for weight loss should be followed up following discharge from the referral centre and growth monitoring done on a regular basis (at least monthly, although it may be necessary to bring the child back more frequently or admit for observation in hospital).

What to do if the child has nausea and vomiting when taking antiretroviral drugs

1) At treatment initiation, children may experience temporary side effects such as nausea, vomiting, fatigue. It is important to know how to give the child the medicines, if signs persist.
2) All children who present with nausea and vomiting should be assessed using IMCI/IMAI guidelines to assess and classify severity of the vomiting and to look for any danger signs. The presence of danger signs should also alert to possible lactic acidosis (see below).
3) If the child vomits doses for more than 2 days or complains of increased fatigue or difficulty breathing then **Refer urgently**;
4) Check if there has been a recent change in treatment.
5) If the child does not need urgent referral or other care e.g. rehydration, then manage as if the nausea and vomiting are related to their antiretroviral drug therapy:
   - If the child vomits their ART within 30 minutes of the dose, the dose should be repeated.
   - Nausea and vomiting may be related to the taste of the medicines. The following suggestions may be helpful to control these symptoms:
     i. take ART drugs separately from other medications such as cotrimoxazole or TB treatment;
     ii. do not mix all the ART syrups together;
     iii. if dissolving capsules (e.g. stavudine) reduce the amount of fluid used to dissolve;
     iv. if the child complains of the taste, then instruct mother or caregiver to place the syringe with medication near the back of mouth to give the medicine (to avoid the child tasting the medicine);
     v. advise mother or caregiver to keep syrups in fridge to make more palatable (Ritonavir cannot be refrigerated);
     vi. reassure the mother or caregiver that nausea and vomiting are common side effects of ART especially in the first few weeks. The symptoms usually settle, but if she is concerned or the child does not respond within two days she should return to the clinic;
     vii. advise on use of fluids, ORS and prevention of dehydration.

Routine monitoring of children on ART for metabolic disorders

Children on ART require regular monitoring of the viral and immune response as well as for possible metabolic and other adverse effects.

Laboratory parameters for monitoring infants and children at baseline, before and during ART

Diagnosis and monitoring laboratory tests	Baseline (at entry into care)	At initiation of first-line or second-line ARV regimen	Every six months	As required or symptom-directed
HIV diagnostic testing: virological and Ab testing	✓	-	-	-
Haemoglobin[a]	✓	✓	-	✓
WBC and differential[b]	✓	✓	-	✓
CD4% or absolute CD4 cell count[c]	✓	✓	✓	✓
Pregnancy testing in adolescent girls[d]	-	-	-	✓
Full chemistry (including, but not restricted to, ALT,[e] liver enzymes, renal function, glucose, lipids, amylase, lipase and serum electrolytes)[f]	-	-	-	✓
HIV viral load measurement[g]	-	-	-	✓

[a] Haemoglobin monitoring at weeks 4, 8 and 12 after initiation of ART is recommended by some experts if AZT is used.

[b] Monitoring at weeks 4, 8 and 12 after initiation of ART is optional.

[c] Children not yet eligible for ART should be monitored with CD4 every six months. For infants and children who develop new or recurrent WHO stage 2 or 3 events or whose CD4 approach threshold values the frequency of CD4 measurement can be increased. CD4% is preferred in children <5 years of age.

[d] Pregnancy testing may be needed for adolescent girls prior to initiating a regimen containing EFV.

[e] The predictive value of pre-emptive liver enzyme monitoring is considered very low by some experts. WHO recommends liver enzyme monitoring in a symptom-directed approach. However, regular monitoring during the first three months of treatment and symptom-directed measurement of liver enzymes thereafter has been considered by some experts for children on nevirapine-based regimens, or for adolescent girls with CD4 values over 250 cells/mm^3 and for infants and children coinfected with hepatitis B or hepatitis C virus or other hepatic disease.

[f] Regular monitoring (every six months) of full chemistry, particularly lipid levels, liver enzymes and renal function, should be considered for infants and children on second-line drugs.

[g] At present, viral load measurement is not recommended for decision-making on the initiation or regular monitoring of ART in resource-limited settings. Tests for assessment of HIV RNA viral load can also be used to diagnose HIV infection, and to assess discordant clinical and CD4 findings in children suspected of failing ART.

Suggestion sheet 1. How to add extra energy and protein to everyday foods

(*Adapt according to local practices*)

- Add milk, cheese, butter or oil to mashed vegetables, potatoes, rice, soups and stews, and other foods.
- To make fortified milk: add 4 spoons (15 ml spoons) of milk powder to 500 ml of cow's milk. Stir well and keep in a cool place. Use full fat milk powder if available instead of skimmed milk powder. Use this fortified milk in tea, on cereals, and in cooking.
- Milk powder can also be added to soup to give more protein.
- Stir a beaten egg into hot porridge or mashed potatoes and cook for a few minutes more to cook the egg. Do not feed the child raw or undercooked eggs. Always cook eggs.
- Put extra spread on sandwiches: nut spreads, jam, butter/margarine, tinned fish.
- Nuts are a good source of energy, keep them near to feed the child as a snack and put chopped nuts or nut paste into foods.
- Add cream, evaporated milk, or yoghurt to soups, puddings, cereals and milky drinks.
- Use local foods that are rich in fat, such as avocado, fatty fish, coconut, oil and fried foods, if tolerated.
- Sprinkle crispy fried onions, fried fatty meat or similar on top of meals.
- Feed the child dried fruits such as raisins and dates– as an extra, not as a replacement for a meal.

Suggestion sheet 2. What to try if the child does not feel like eating

(Adapt according to local practices)

- Give the child small, frequent meals – eat something every 2–3 hours.
- Give the child food whenever he/she is hungry or feels like eating. Do not wait until a mealtime.
- Choose foods that the child enjoys most. Some children are very 'picky' eaters and are more likely to eat these foods.
- On days the child feels well or is eating well, try to give extra meals.
- Take the child for a walk in the fresh air before eating and eating in a well-ventilated room may help.
- Feed the child with family or other people so it is a social event. If the child is in bed, have the family eating at his/her bedside. Children sometimes eat better when others are present and sometimes they are better alone as other people may cause unhelpful distraction. Be prepared to try different ways. Always stay with the child while eating, both to watch for difficulties and to encourage eating.
- Make sure the child has enough liquid in the day. Try to use fluids such as milk and other energy-containing drinks.
- Encourage the child to eat slowly and relax for a while after eating. Avoid him/her lying down immediately after a meal.
- Make meals as attractive as possible – garnish, carefully served, set table nicely.
- Some foods may stimulate the appetite such as ginger tea, or lemon juice in clean boiled water.
- When the appetite has returned or the illness has passed, be sure to feed the child an extra meal (or increased amount per meal) to make up for the missed meals.
- Lack of appetite may be a sign of an infection such as tuberculosis or of depression; talk to your doctor about it.

Suggestion sheet 3. What to try if the child has a sore/dry mouth or throat

(These are suggestions. Always check for oral and oesophageal thrush or mouth sores, e.g. herpes stomatitis or Kaposi lesions)

Sore mouth

- If oral thrush is visible or other mouth ulcers are present then specific treatment might be required e.g. oral fluconazole and/or nystatin. If these are not available then apply gentian violet (GV) to the mouth after washing your hands. Wash again after applying the GV. Do not give any fluids or feeds for 20 minutes after giving oral nystatin or applying gentian violet. Refer children with a sore mouth/mouth ulcers if mother/caregiver says that child is not eating, child has lost weight in past week or is clinically dehydrated.
- Clean mouth frequently, at least twice a day morning and evening, preferably after every meal. Rinse with slightly salty warm water: use clean boiled water.
- Use cinnamon tea as a mouthwash (1/4 teaspoon of cinnamon to one cup of boiling water; cover and allow to cool).
- Add gravy, sauce or custard to meals to make them moist but not sticky or dip foods in liquid.
- Suggest that the child uses a straw to drink.
- Chop or mash food.
- Avoid rough foods such as toast or raw vegetables.
- Avoid sticky foods such as peanut butter.
- Avoid very hot or very cold foods.
- Avoid spicy, salty or acidic foods that irritate the mouth of the child.
- Suggest that the child drink sour/fermented milk or yoghurt.

If mouth ulcers are present, local anaesthetic e.g. lignocaine 1% can be applied with a cotton wool ball onto ulcer. Can be repeated every 3-4 hours or 10 minutes prior to meals.

Sore throat

The suggestions above for a sore mouth may be helpful. Also, try the following:

- Honey with water has a soothing effect: one tea spoon of honey in half cup of luke warm water.
- Feed the child soft foods that are easy to swallow.
- Offer the child nourishing liquids if solid food is too hard to eat.

Dry mouth

- Stimulate saliva production by having the child sucking a hard sweet or chewing gum.
- Serve liquids with meals and make the child sip cold drinks frequently during the day.
- Rinse mouth with clean warm salty water.
- Avoid very hard foods and drinks high in caffeine such as coffee, strong tea and sodas.

Suggestion sheet 4. What to try if the child has a change in taste

(These are suggestions)

- Clean the child's mouth frequently. Rinse with slightly salty warm water: use clean boiled water.
- Use salt, sugar, spices, vinegar, lemon, and other flavours to mask any unpleasant taste in the child's mouth. Some medications may make mint, garlic and ginger taste less pleasant.
- Feed the child the foods he/she likes.
- Try a variety of foods as the child's taste may come back after a few weeks.
- Very cold foods may taste better.
- Fresh fruits and fruit juice are refreshing and may leave a pleasant taste in the child's mouth.

Suggestion sheet 5. What to try if the child has diarrhoea

All children with diarrhoea should receive oral zinc supplements for 2 weeks.

Children older than 6 months should receive 20 mg daily for 2 weeks

(These are suggestions)

- Encourage the child to continue eating and drinking when there is diarrhoea. The child should eat foods he/she can tolerate.
- Encourage the child to drink lots of fluids: more than 8 cups a day, especially clean boiled water, to prevent dehydration. If dehydrated, make up oral rehydration solution (see below).
- Feed the child small meals, five or more times in the day. He/she should eat slowly and chew well.
- Give particular attention to food hygiene. Use clean boiled water, keep food and utensils very clean, store food for as short a time as possible in a cold place. If you are reheating food, make sure it is very hot. Keep raw food separate from cooked foods.
- Make rice soup. Boil one cup of rice in 5–6 cups of clean water with a bit of salt for 1 hour. Feed the child both the rice and the rice water.
- Feed the child ripe yellow banana, cooked apple or mango; avoid unripe fruits.
- Peel and cook vegetables rather than feeding the child raw vegetables.
- Feed the child refined cereals rather than wholegrain cereals and flour while he/she has diarrhoea.
- Avoid beans, gas-forming foods, fizzy drinks and highly-spiced foods.
- Feed the child warm foods, rather than very hot or cold foods.
- Fat is a good source of energy, so do not cut out fat if it is not causing the child a problem. Reduce fatty foods temporarily if they make the child feel worse but introduce again later.
- For children: sometimes cow's milk or dried milks purchased from the shops can be a problem. If breastfeeding, continue, or increase breastfeeding. Fermented milks, when available, can be used for the older child.
- Be prepared to try different foods until you find something that suits you or your child.
- Some medications may cause diarrhoea. Talk to your doctor or nurse.
- Oral rehydration solution is not needed in ordinary diarrhoea of short duration where the child is not dehydrated.

Preparation of oral rehydration solution (ORS) to use if there is dehydration

- Use clean water, boiled if possible.
- *From a packet:* Follow directions on the packet.
- *With salt and sugar:* To one litre of water, add one-half teaspoon of salt and eight teaspoons of sugar. Stir or shake well. The water should taste no more salty than tears.
- *With powdered cereals:* To one litre of water, add one-half teaspoon of salt and eight teaspoons of powdered cereals. Rice is best, but fine ground wheat flour, maize, sorghum or cooked mashed potatoes can also be used. Boil for five to seven minutes to make a liquid soup or watery porridge. Cool the drink quickly.
- In addition to ORS, also have the child eating and drinking foods and fluids that are tolerated.

Suggestion sheet 6. What to try if the child has nausea and/or vomiting

(These are suggestions)

- Make sure the child has enough liquid in the day. Try to use fluids such as milk and other energy-containing drinks.
- Encourage the child to drink liquids about half an hour after meals, rather than with meals.
- Encourage the child to drink liquids slowly.
- Feed the child small, frequent meals: eat something every 2–3 hours.
- Feed the child whenever he/she is hungry or feel like eating. Do not wait until a mealtime.
- On days the child is well, try to increase the quantity and variety of food intake.
- Let the child chew foods well to make them easier to digest.
- Have the child eating slowly and relaxing for a while after eating. Avoid him/her lying down immediately after a meal.
- Keep some high energy snacks available: nuts, yoghurt, bread with a spread.
- Some children find sour foods easier to eat than sweet foods.
- Avoid cooking smells: prepare food away from the child.
- Take the child for a walk in the fresh air before eating and eating in a well-ventilated room may help.
- Try dry foods such as dry bread, toast or plain biscuits and keep meals dry.
- Avoid large amounts of fizzy drinks and beer that can make you feel bloated and gassy.
- Choose foods that do not have a strong smell. Cold foods generally have less smell.
- Increase starchy foods and reduce fatty foods temporarily.
- When the illness has passed, be sure to feed the child an extra meal (or increased amount per meal) to make up for the missed meals.
- Nausea may be a side-effect of drug treatments; talk to your doctor about it.
- There are also medications which can reduce nausea, so discuss these with a health worker if needed.

In the area of nutrition and HIV, children deserve special attention because of their additional needs to ensure growth and development and their dependency on adults for adequate care. It was therefore proposed to first develop guidelines for children and thereafter consider a similar approach for other specific groups.

The content of these guidelines acknowledges that wasting and undernutrition in HIV-infected children reflect a series of failures within the health system, the home and community and not just a biological process related to virus and host interactions. In trying to protect the nutritional well-being or reverse the undernutrition experienced by infected children, issues of food insecurity, food quantity and quality as well as absorption and digestion of nutrients are considered. Interventions are proposed that are practical and feasible in resource-poor settings and offer a prospect for clinical improvement.

The guidelines do not cover the feeding of infants 0 to 6 months old, because the specialised care in this age group is already addressed in other WHO guidelines and documents.

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